

presented to the customer, until

A) a first predetermined event occurs, whereupon presentation of one message terminates; and

B) a second predetermined event occurs, whereupon presentation of the other message terminates.

A³
17. A portable terminal according to claim 16, wherein
iii) one predetermined event comprises entry of a monetary amount into the keypad, and
iv) the other predetermined event comprises swiping of a credit card through the card reader.

18. A portable terminal according to claim 1, wherein no other messages requesting action by a user are presented, other than those of paragraph (e)(iii).

REMARKS

✓ This Amendment is in response to the Office Action mailed on May 30, 1997. Claims 1 and 2 - 9 are pending, with claims 6 and 7 standing allowed at present. Claim 2 has been cancelled. Recitations of claim 2 have been added to claim 1. Claims 11 - 18 are added by this amendment.

re: Added Claims

Claim 11 recites that the data is carried by an ATM network. Support for this recitation is found in the Specification, page 7, section 1. Barakai and the other references do not show the recitations of claim 11.

Claims 12 - 15 state, speaking generally, that the portable terminal only communicates with its base station when the portable terminal is removed from its base station. This operation acts as a security measure.

One way of accomplishing this operation is given in the Specification, page 9, section 4. That section refers to a transmitter carried by the portable terminal, and a receiver carried by the base station. The transmitter and receiver operate independently of the wireless modem. Thus, for example, when the portable terminal is removed from the base station, the transmitter starts transmitting a code. When the base station receives the code, it activates the wireless modem. When no code is received, the base station de-activates the wireless modem.

Barakai and the other references do not show the recitations of claims 12 - 15.

Claim 16 states that two messages are alternately presented to the customer, and that their presentation terminates when two pieces of data are entered by the customer. Support for this is found in the Specification, page 11, section 6. Barakai and the other references do not show the recitations of claim 16.

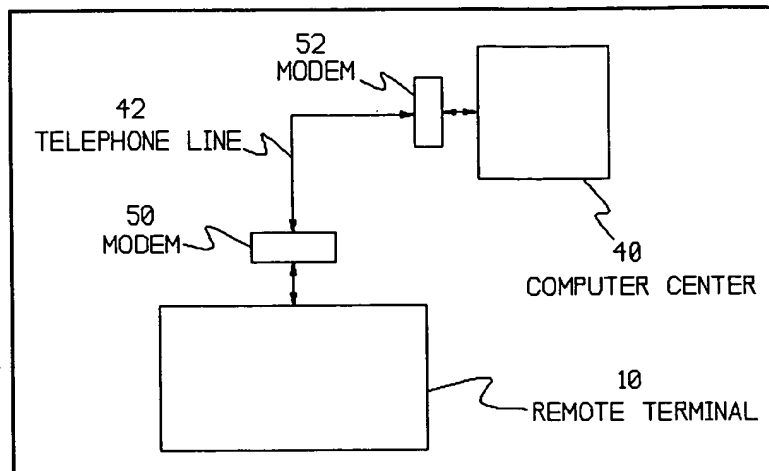
The preceding paragraph applies to claims 17 and 18.

Claim 1

Claim 1 was rejected as obvious, based on (1) Barakai and (2) wireless modems. Amended claim 1 recites:

1. A portable terminal, comprising:
 - a) a keypad containing between 10 and 15 keys;
 - b) a card reader;
 - c) a wireless modem;
 - d) a display;
 - e) logic means for
 - i) accepting data from the card reader and the keypad; and
 - ii) transmitting said data to a base station, using said wireless modemand which comprises means for
 - iii) issuing messages on said display which instruct the user to
 - A) present a card to the card reader and
 - B) enter a monetary amount using the keypad; and
- f) a printer for printing a paper receipt.

Sketch 1, below, is a simplification of Barakai's Figure 1.



Sketch 1

Barakai's REMOTE TERMINAL 10 communicates with a COMPUTER CENTER 40 through MODEMS 50 and 52, which use the TELEPHONE LINE 42. Barakai's device seems to show some of the elements of claim 1. However, as the Office Action points out, Barakai does not show a wireless modem, as recited in claim 1(c).

Wireless Modem not Shown in Prior Art

The Office Action has not shown a wireless modem in the prior art. MPEP 2143.03 states:

To establish prima facie obviousness . . . **all the claim limitations** must be taught or suggested by the prior art.

Therefore, the rejection is remiss, in failing to show the wireless modem.

In support of the rejection, the Office Action states

Commercially available devices such as cordless telephones, electronic note pads, POS¹ terminals, [and] card readers having wireless modems for data communication are known and old. (Page 3.)

However, this statement appears to be unsubstantiated. Of the five references cited by the PTO (Barakai, Gutman, Narita, Rey, and Campo), none shows a wireless modem.

Specifically:

- Barakai shows "hard-wired" modems, not wireless modems.
- Gutman shows "wireless messages," but mentions no intermediate telephone system, as required by wireless modems.
- Narita shows a "hard-wired" connection between devices.
- Rey appears to show no communication at all.
- Campo shows radio communication between a POS terminal 11 and a remote computer (near column 5, line 50). But he does not discuss an intermediate telephone system, as required by a wireless modem.

Therefore, in view of the fact that none of the cited references show a wireless modem, Applicant requests a citation of

¹ The term "POS" is interpreted as an acronym for "Point of Sale."

authority in support of the PTO's statement.

Further, Applicant points out that the mere existence of wireless modems in a "known and old" device is insufficient. That device must be **analogous** prior art.

One reason for requesting a citation of prior art is the following. The PTO's rationale extracts, from prior-art references, elements favorable to the PTO's contention of obviousness. But the rationale **ignores** any teachings in the references which are **contrary** to the PTO's position. That is not allowed.

The references must be read **as-a-whole**. MPEP § 2141.03, last paragraph, states:

Prior art must be considered in its entirety,
including disclosures that teach away from the
claims.

The PTO's rationale fails to follow this requirement. Consequently, Applicant requests, under 37 CFR §§ 1.104(b) and 1.106(b), and MPEP § 2144.03, third paragraph, that the PTO show a wireless modem in a reference.

Wireless Modem Renders Barakai Inoperative

Substituting a wireless modem for Barakai's modem 50 renders Barakai **inoperative**. MPEP § 2143.01, last paragraph, states:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.

Assume that Barakai's modem 50 is replaced with a wireless modem. What does this accomplish ? With what does this wireless modem now communicate ? The wireless modem does not communicate with Barakai's other modem 52, because the latter is not a wireless modem. Wireless modems must communicate with a compatible **base station**. But the Office Action has not proposed adding a base station to Barakai. Thus, Barakai is rendered **inoperative** by the substitution. Plainly, the substitution of a wireless modem into Barakai's remote terminal 10 is motivated by Applicant's claim, since the substitution produces nothing useful.

From another perspective, merely placing a wireless modem into Barakai's device **serves no purpose at all**. If that wireless modem is to be useful, it must communicate with a base station. Thus, to obtain a useful device, **two** elements must be substituted into Barakai: (1) the wireless modem and (2) the base station. No teaching has been given for this dual substitution.

Specifically, the PTO is apparently suggesting the following:

1. That Barakai's modem 50 be replaced by a wireless modem, together with a base station which receives the wireless modem signals.
2. That the wireless modem be attached to Barakai's remote terminal 10.

However, no teaching has been shown for this suggestion. A teaching within the prior art must be shown which suggests combining the prior-art elements cited. See MPEP § 2143.01.

Further, it appears that hindsight is being used in the substitution of wireless modems into Barakai. For example, other substitutions are possible:

1. Barakai's remote terminal 10 and the computer center 40 can communicate by wireless means completely. Modem 50 can be replaced by a wireless modem, and modem 52 can be replaced by a corresponding base station. However, in this case, the computer center 40 and the remote terminal 10 must be kept no more than a few hundred yards apart, as explained below.
2. Modem 50 can be left intact, and modem 52 can be replaced by a wireless modem/base station pair.
3. Conversely, modem 52 can be left intact, and modem 50 can be replaced by a wireless modem/base station pair.
4. Both modem 50 and modem 52 can be replaced by wireless modem/base station pairs.

Only substitutions 3 and 4 provide Barakai's remote terminal 10 with a wireless modem.

Therefore, multiple substitutions of the same type can be made in Barakai, yet only some of them produce claim 1. It thus appears that the substitution chosen by the Office Action was motivated by Applicant's own claims. That is motivation by hindsight, and is not allowed.

Further still, Barakai has no need for a wireless modem. Barakai is clearly concerned with a check-out station in a retail store. Both the customer and the attendant of the store are present at the check-out station. Why should Barakai's device have a wireless modem, given that

- Barakai expresses no desire to make his device mobile and
- both customer and attendant are present at the check-out station ?

Where would the mobile wireless modem go, and where is the teaching in Barakai for sending it there ?

**Other Types of "Cordless" Modems are Available
No teaching Shown for Substituting "Wireless" Type into Barakai**

Wireless modems represent one type of "cordless" communication; other types also exist, such as infrared links, other radio frequency links (as in some cited references), and cellular modems. The Office Action has not shown a teaching in favor of selecting a "wireless" modem from the prior art, as opposed to one of the other three types just identified.

Further, as stated above, the art cited by the Office Action shows other types of communication devices, instead of wireless modems. Thus, the Office Action is inconsistent. On one hand, the Office Action has not shown a wireless modem to combine with Barakai. On the other hand, the Office Action has shown prior art using **different** communication devices than wireless modems.

The inconsistency is this: the Office Action cites prior art

using some types of communication devices, but combines Barakai with **non-cited wireless modems**. If combinations of elements are to be made, those combinations must be selected from the cited prior art.

Wireless Modem is not Known Equivalent to Ordinary Modem

The Office Action asserts that a wireless modem is a known equivalent of a regular modem, and that substitution of it into Barakai is thus a matter of "design choice." However, this assertion is incorrect. Numerous technical differences exist between wireless modems and regular modems.

One is susceptibility to interference. Regular modems use telephone cable, which is ordinarily shielded. Wireless modems use an rf carrier, which is not shielded, and is corrupted by other rf signals. For example, microwave ovens are broad-band sources of rf noise. It is well known that wireless modems cannot be used reliably near such ovens, or that special encoding techniques are required. The same conclusion applies to use of wireless modems in the presence of electrical relays and brush-type motors, which produce electrical arcing, which is a source of broad-band noise.

Similarly, cellular telephones radiate signals which interfere with wireless modems, if the cellular carrier is near the modem carrier in frequency.

Therefore, wireless modems are subject to interference, and are restricted to specific locations. The same restriction does not apply to ordinary modems. Thus, wireless modems are not an

interchangeable substitute for regular modems.

A second difference is that signals transmitted by wireless modems can be easily intercepted by hackers, because the signals travel through the air. This problem does not occur in ordinary modems.²

A third difference is that wireless modems are significantly more expensive than ordinary modems. They are more expensive because they are more complex. Being more complex, they are necessarily less reliable. Thus, again, wireless modems are not an interchangeable substitute for ordinary modems.

A fourth difference is that wireless modems are short-range devices, and are used to connect computers, or terminals, within a single room, or building. At best, wireless modems have a range of a couple of hundred yards.³ In support of the range limitation, Applicant points out that it is well known that wireless modems operate at a signal power of one watt, or less.

Therefore, four technical differences have been shown between wireless modems and ordinary modems: wireless modems are

- 1) more susceptible to rf interference,

² It is true that a "wire tap" can intercept a modem call made over a telephone line. However, wiretapping is illegal. Further, wiretapping requires that a physical connection be made to a telephone line. The tapper must locate the telephone line of interest, and then connect to it. The former task is difficult, and the latter renders the tapper subject to detection.

In contrast, a wireless modem signal can be intercepted without detection by the police.

³ No exact range can be specified, because the range depends on several factors, such as atmospheric conditions, the presence of obstacles, such as buildings and trees, and the frequency used.

- 2) more susceptible to interception,
- 3) more complex, and thus more expensive, and
- 4) of short-range operation.

These differences show that wireless modems are not an interchangeable substitution for regular modems.

Consequently, since wireless modems have different properties than ordinary modems, they are not a known equivalent, and "design choice" is not involved.

From another perspective, if mere "design choice" were involved, then the designer would not need to bother with the four factors identified in the previous paragraph. However, it is clear that no designer would mindlessly substitute a wireless modem for an ordinary modem, in view of the discussion given above.

Since design choice is not involved, a **reason**, or teaching, under section 103 must be given for substituting a wireless modem into Barakai. No reason has been given.

Further, if the Office Action wishes to persist in the assertion that "design choice" allows free substitution of a wireless modem for an ordinary modem, Applicant requests that evidence be submitted from actual designers in support of this assertion. One reason is that the undersigned attorney has recollection of a wireless LAN project which failed, partly because of interference from microwave ovens, cellular telephones, or both.

Amendments to Claim 1

Claim 1 has been amended to recite a printer. Barakai shows none.

Claim 1 has been amended to recite that specific messages are presented on the display. Barakai does not show them.

In this connection, original claim 2 recited these messages. Claim 2 was rejected on the grounds that seven specific messages are known in the art. However, again, no reference was cited which shows these messages.

Further, no showing has been made that analogous prior art shows these messages. Still further, even assuming that analogous prior art shows the seven messages, no teaching has been given for selecting the particular two messages recited in claim 1.

Therefore,

- No reference has been cited which shows a wireless modem;

- The Office Action asserts that POS terminals using wireless modems are well known, but has failed to show such a terminal;

- It appears that hindsight is being used in combining a wireless modem with Barakai:

- Barakai does not discuss portability, and has no need for it;

- No justification has been given for selecting modem 50 in Barakai as

the candidate for the substitution;

-- No justification has been given for selecting a "wireless" modem for substitution in Barakai, as opposed to other types of cordless communication devices;

-- A wireless modem is not an equivalent for an ordinary modem:

-- Wireless modems are
susceptible to rf interference;
susceptible to interception;
more complex, and thus less
reliable; and
communicate over a limited range.

Therefore, wireless modems are not a "design choice" for ordinary modems.

In conclusion, a wireless modem must be shown in the art, and a teaching must be given for combining it with Barakai.

Claim 3

Claim 3 recites:

3. Terminal according to claim 1, and further comprising:

f) means for transmitting a code which identifies said terminal to said base station.

Claim 3 was rejected as obvious, based on Barakai alone. The

Office Action admits that Barakai does not show claim 3.

The Office Action asserts obviousness of claim 3, on the grounds that, in networks, a host must know the identities of the terminals with which it communicates. However, that is simply not true, and, if true, not relevant.

As to relevance, Barakai does not show a network. Further, Barakai's host has no need for the identity of Barakai's terminal 10. The reason is that the terminal 10 merely looks up data stored in the host. The host has no need to know the identity of the terminal.

Independent of the foregoing, claim 3 has been amended to recite that the identification is transmitted **to the base station**, not to a remote host computer. Support for this is found in the Specification, page 9, section 4. Barakai does not show a base station.

Claim 4

Claim 4 recites:

4. Terminal according to claim 2, and further comprising:

f) means for detecting when a remote verification service signals acceptance of said monetary amount as a charge against an account, and

g) means for illuminating a light which is visible for at least 20 feet, in response to said acceptance.

The device of claim 4 allows a user to learn that a credit-

card transaction has been "OKed" by an optical signal, visible 20 feet away.

No prior art has been cited in support of the rejection. As explained above, prior art is required.

Further, it is asserted that the 20-foot recitation is "subjective." Applicant fails to understand how the term "20 feet" is "subjective." "Subjective" means "subject to different interpretation, by different observers." In patent law, unless stated otherwise, an "average" observer is assumed. The "average" observer, by law, is not a subjective person.

Claim 5

Claim 5 recites:

5. A system, located within a building, comprising:

a) multiple base stations, each linkable to a respective dedicated telephone channel;

b) multiple terminals, each comprising

i) modem means for wireless communication with a base station;

ii) a card reader;

iii) a keypad containing between about 10 and 15 keys;

iv) a display;

v) logic means, coupled to the modem means, card reader, keypad, and display, for

A) issuing a message on the display requesting a user to present a card to the card reader;

B) issuing a message on the display requesting the user to enter a monetary amount via the keypad; and

C) transmitting data read from the card and the monetary amount to a remote agency, via the modem means.

Barakai is **directly contrary**, or silent, as to several recitations of claim 5. For example, the preamble of claim 5, plus paragraph (a), state that the base stations are located within a single building. Barakai does not show this. He shows no "base stations."

Further, he refers to a plurality of terminals 10 in his Figure 1. (Column 1, bottom, and claim 1, lines 5 and 6.) However, he does not state whether they are located at the **same** location, or **different** locations. It would appear that they are at **different** locations. The reason is that if they were located at the **same** location, then no reason for telephone line 42 exists: the computer 40 can be located at that same location.

In addition, claim 5(a) recites that each terminal is linkable with a **respective** telephone channel. Barakai shows only a single telephone line 42 in his Figure 1.

Therefore, Applicant requests, under 37 CFR §§ 1.104(b) and 1.106(b), that the PTO specifically identify these three elements in Barakai:

1. multiple terminals at a single location;
2. a respective telephone channel for each

terminal; and

3. multiple base stations.

Claim 8

Claim 8 recites:

8. A method of transmitting data to a system which maintains accounts of credit transaction, comprising the following steps:

a) presenting a wireless terminal to a customer, which

i) issues a message requesting presentation of a credit card;

ii) reads card data from a credit card, when presented;

iii) issues a message requesting entry of a monetary amount;

iv) accepts said monetary amount from a keypad; and

v) transmits said monetary amount and said card data to said system.

Applicant is unable to find claim 8(a), 8(a)(i), (a)(iii), (a)(iv), and the wireless aspect of (a)(v) in Barakai. Specifically, Applicant cannot find the concept of handing a terminal to a customer within the cited prior art. Consequently, Applicant requests, under 37 CFR §§ 1.104(b) and 1.106(b), that the PTO specifically identify these five elements in Barakai.

Claim 9

Claim 9 has been amended to now state that the user has never

seen the device. This is an objectively measurable condition, and is perfectly unambiguous.

Applicant is unable to find claim 9(a)(i), (a)(ii), (b), and (c) in Barakai. Consequently, Applicant requests, under 37 CFR §§ 1.104(b) and 1.106(b), that the PTO specifically identify these four elements in Barakai.

Claim 10

The comment about the amendment to claim 9 applies to the similar amendment to claim 10.

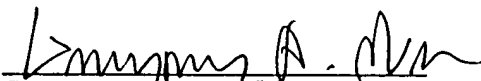
No prior art has been cited which shows the subject matter of claim 10. Applicant requests that prior art be shown.

Conclusion

Applicant requests that the rejections of the pending claims be reconsidered and withdrawn.

Applicant expresses thanks to Examiner Thien Le for the careful consideration given to this application, and for the allowance of claims 6 and 7.

Respectfully submitted,


Gregory A. Welte
Reg. No. 30,434

NCR Corporation
1700 South Patterson Blvd.
ECD - 2
Dayton, OH 45479
September 2, 1997

(937) 445 - 2990

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Gregory A. Welte
Gregory A. Welte